

cop. /
Supplement to SCIENCE, January 12, 1923

SCIENCE

NEW SERIES. VOLUME LVI.

JULY-DECEMBER, 1922

NEW YORK
THE SCIENCE PRESS
1923

THOMAS J. GRIFFITHS & SONS
100 Liberty Street,
UTICA, N. Y.

GENERAL LIBRARY
1922
UNIVERSITY OF MICHIGAN

SCIENCE

NEW SERIES
VOL. LVI, No. 1436

FRIDAY, JULY 7, 1922

SINGLE COPIES, 15 CTS.
ANNUAL SUBSCRIPTION, \$6.00

Books for Veterinarians

SISSON—

Anatomy of Domestic Animals. By SEPTIMUS SISSON, S. B., V. S., Professor of Comparative Anatomy in Ohio State University. Octavo of 930 pages, with 725 illustrations, many in colors. *Second Edition.* Cloth, \$12.00 net.

BUCHANAN AND MURRAY—

Veterinary Bacteriology: a Treatise on the Bacteria, Yeasts, Molds, and Protozoa Pathogenic for Domestic Animals. By ROBERT E. BUCHANAN, Ph.D., Professor of Bacteriology; and CHARLES MURRAY, B. Sc., D. V. M., Associate Professor of Veterinary Bacteriology, Iowa State College of Agriculture and Mechanic Arts. Octavo of 610 pages, illustrated. *Third Edition.* Cloth, \$4.50 net.

HADLEY—

Veterinary Science. By FREDERICK B. HADLEY, D. V. M., Professor of Veterinary Science, University of Wisconsin. 12mo of 420 pages, illustrated. Cloth, \$3.00 net.

HADLEY—

The Horse in Health and Disease. By FREDERICK B. HADLEY, D. V. M., Professor of Veterinary Science, University of Wisconsin. 12mo of 261 pages, illustrated. Cloth, \$1.50 net.

HEINEMAN—

Milk. By PAUL G. HEINEMAN, M. D., Wisconsin. Octavo of 684 pages, illustrated. Cloth, \$7.00 net.

KAUPP—

Anatomy of the Domestic Fowl. By B. F. KAUPP, M. S., D. V. M., Poultry Investigator and Pathologist, North Carolina Experiment Station. 12mo of 373 pages, illustrated. Cloth, \$3.50 net.

KAUPP—

Poultry Culture, Sanitation, and Hygiene. By B. F. KAUPP, M. S., D. V. M., Poultry Investigator and Pathologist, North Carolina Experiment Station. 12mo of 573 pages, with 200 illustrations. *Second Edition.* Cloth, \$3.00 net.

SHARP—

Ophthalmology for Veterinarians. By WALTER N. SHARP, M. D., Professor of Ophthalmology in the Indiana Veterinary College. 12mo of 210 pages, illustrated. Cloth, \$2.00 net.

LYNCH—

Diseases of the Swine. By CHARLES L. LYNCH, M. D., D. V. S. Chapter on *Castration and Spaying* by GEORGE R. WHITE, M. D., D. V. S. Octavo of 741 pages, illustrated. Cloth, \$5.00 net.

DIETRICH—

Livestock on the Farm. By WILLIAM DIETRICH, B. S. A., M. S., Head of the Department of Animal and Dairy Husbandry, University of Minnesota, Crookston Branch. 12mo of 269 pages, illustrated. Cloth, \$1.75 net.

.....SIGN AND MAIL THIS ORDER FORM TODAY.....

W. B. SAUNDERS COMPANY, West Washington Sq., Phila.

PLEASE SEND ME THE BOOKS CHECKED (✓) AND CHARGE TO MY ACCOUNT:—

Sisson's Anatomy of Domestic Animals.....\$12.00 net
Buchanan and Murray's Veterinary Bacteriology, \$4.50 net
Hadley's Veterinary Science.....\$3.00 net
Hadley's Horse in Health and Disease.....\$1.50 net
Heineman on Milk.....\$7.00 net

Kaupp's Anatomy of the Domestic Fowl.....\$3.50 net
Kaupp's Poultry Culture.....\$3.00 net
Sharp's Ophthalmology for Veterinarians.....\$2.00 net
Lynch's Diseases of the Swine.....\$5.00 net
Dietrich's Livestock on the Farm.....\$1.75 net

NAME.....

ADDRESS.....

AMERICAN-MADE WAVELENGTH SPECTROMETERS

THE WAVELENGTH SPECTROMETER has become an essential adjunct to the well equipped Laboratory. Its convenience, accuracy and sturdy construction make the Wavelength Spectrometer an ideal instrument for spectrum and color analysis.

GAERTNER SPECTROMETERS embody the results of upward of twenty-five years of experience gained in the construction of precision optical instruments.

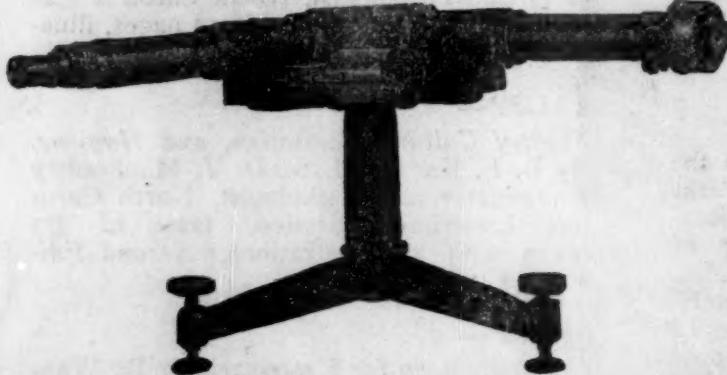
Prompt Delivery on Standard Instruments
Our Specially Designed

ULTRAVIOLET AND INFRARED SPECTROMETERS

are useful for many investigations. A very valuable combination in conjunction with the Wavelength Spectrometer is the improved

NUTTING PHOTOMETER

Correspondence invited.



Features:

1—DESIGN OF THE INSTRUMENT. The design of the instrument provides for greatest rigidity and permanence of adjustment as the composite parts have been reduced to a minimum by joining as many as practicable in a single casting, at the same time giving the Spectrometer a graceful appearance.

2—ACCURACY IN CALIBRATION. Greatest care is taken in calibrating the wavelength drum in order to insure the highest possible accuracy.

3—EASY READING OF DRUM. The divisions are sufficiently heavy and distinct and the figures ample and spaced to best advantage.

4—ESSENTIAL PARTS INCLUDED:

Protection cap for prism—
Leveling screws in tripod—
Bilateral micrometer slit—
Extra high power eyepiece—are furnished with the instrument and included in purchase price.

LABORATORY APPARATUS INSTRUMENTS OF PRECISION UNIVERSAL LABORATORY SUPPORTS

Wm. Gaertner & Co.

5345-49 Lake Park Avenue
CHICAGO, U. S. A.

SPENCER DIOSCULAR

Attachable to any standard compound microscope and possessing many of the advantages of the Mon-objective Binocular.

The optical system in this instrument is, in all respects, identical with that employed in our binocular microscopes except that a negative lens has been introduced to compensate as far as possible for the increased tube length that results from adding the binocular body to the tube of the ordinary microscope.

The characteristic features include:

- I. Convenient adjustment for pupillary distance.
- II. Dial register for individual settings.
- III. Convergent tubes, giving normal vision.
- IV. Independent focusing of oculars.



SPENCER DIOSCULAR NO. 440

\$50.00

CATALOGUE SENT ON REQUEST

SPENCER LENS COMPANY
MANUFACTURERS

Microscopes, Microtomes, Delineascopes, Optical Glass, Telescope
Discs and Lenses, Optical Measuring Instruments, Etc.
BUFFALO, N. Y.



Gen.
water

CONTENTS AND INDEX.

NEW SERIES. VOL. LVI.—JULY TO DECEMBER, 1922

NAMES OF CONTRIBUTORS ARE PRINTED IN SMALL CAPITALS

ABBOTT, A. C., Death Rate from Tuberculosis, 387
Abstracts, Analytic, G. FULCHER, 678
Acoustics, C. A. RUCKMICK, 357, 506; T. LYMAN, 633
Adrenal, Emergency Function of, F. A. HARTMAN, 146
Aerological Summary, L. L. MEISINGER, 482
Agglutination and Tissue Formation, L. LOEB, 237
Agriculture and Wireless Telephony in France, 70
Agriculturists, Can. Soc. of Technical, 102
Air, Filtered, A. McADIE, 108
Albino Mutation of Fungus, L. BONAR, 226
ALEXANDER, J., Cultivation and Evaporation, 196; Physico-Chemical Mechanism of Mutation and Evolution, 323; Colloidal State, 663
Algæ, L. H. TIFFANY, 285
ALLEN, W. E., Repositories for Scientific Publications, 197
American Association for the Advancement of Science: Southwestern Division, 140; Social and Economic Sciences, 163, 708; Section E—Geology and Geography, E. S. MOORE, 174; Section Q—Education, B. T. BALDWIN, 176; Salt Lake City Meeting, W. W. SARGEANT, 241; and American Medical Association, 305, 566; Boston Meeting, 611; Autumn Meeting of Executive Committee, 613; Annual Report of Permanent Secretary, 614; Report of Committee on Convocation Week, 616; Chemistry at Boston, 628; Hotels for Boston Meeting, 682; Medical Sciences, 707; History of Science, 708; Railway Tickets to Boston, 709
Animal, Experiments in Great Britain, 326; Mechanism, C. S. SHERRINGTON, 345
Antiquity of Man, H. F. OSBORN and C. A. REEDS, 256
Antivivisection Legislation in California, 566
Anuran Metamorphosis, Iodine and, W. W. SWINGLE, 720
Archeology, Mexican, ZELIA NUTTALL, 19
ARCHIBALD, R. C., German Publishers, 45
AREY, L. B., Human Yolk Sac, 75
Astronomical Soc., Amer., J. STEBBINS, 459
Austrian Intellectual Workers, 743
Avian Populations in California, J. GRINNELL, 671
Azotobacter, P. L. GAINY, 21, and H. W. BATCHELOR, 49
BABCOCK, E. B. and J. L. COLLINS, Duplicate Genes and Inheritance of Glandular Pubescence, 392
Babcock Glassware, 411
Bache Fund, Grants from, 711
Bacterial Plant Diseases in P. I., C. G. WELLES, 18
BAKER, A. C., Tingitidæ or Tingidæ, 603
BALDWIN, B. T., Section Q—Education 176
Bananas, Disease of, M. A. CARLETON, 663
BANCROFT, W. D., Applied Colloid Chemistry, E. F. BURTON, 539
BARUS, C., Vacuum Gravitation Needle, 452
Basal Glauconite and Phosphate Beds, M. I. GOLDMAN, 171
BASSETT, P. R. and L. BELL, Dissociation of Carbon in Intensive Arc, 512
BATCHELOR, H. W. and P. L. GAINY, Azotobacter, 49
BAUER, L. A., Earth Current Observations, 592
Bayer 205, 514
Bean Mosaic Virus, R. NELSON, 342
BEAUMONT, A. B., Soil Shifting in Conn., 279
Beef Agar, F. W. MARSH, 367
BELL, L. and P. R. BASSETT, Dissociation of Carbon, 512
BENJAMIN, M., American Geology, 480, 755
Bibliography and Research, K. C. WALKER, 418
Biological Societies, American, Proposed Federation of, 681, A. F. SHULL, 184, 359; Stains, 450; H. J. CONN, 156, 562, 594; Literature, Abstracting and Indexing of, J. R. SCHRAMM, 495
Biology, Club of Ohio State University, 245; Modern, R. PEARL, 581; Experimental, 627
BISHOP, K. S., and H. M. EVANS, A Dietary Essential to Reproduction, 650
BISHOP, W. W., Record of Science, 205
Bishop Museum Fellowships, 102
BLUMBERG, H., Hobson's Functions of Real Variable, 574
BLUMENSTOCK, J., and A. B. LUCKHARDT, Parathyroid Tetany, 257
Boldyreff, W. N., V. KELLOGG, 481, 664
BONAR, E., Albino Mutation of Fungus, 226
Botulinus Toxin, R. L. STEHLE, 143; J. BRONFENBRENNER, 280
Boylston Medical Prizes, 565
BRANNER, J. C., How and Why Stories, D. S. JORDAN, 46
British Association, Hull Meeting, 103, 390
BRONFENBRENNER, J., Botulinus Toxin, 280
BROUWER, H. A., Geology of California and Dutch E. Indies, 388
BROWN, E. W., Watchers of the Sky, Alfred Noyes, 717
BROWN, J. H., Teaching of Evolution, 448
Bryn Mawr College, Contribution of, to Higher Education of Women, W. H. WELCH, 1
Budget, Federal, 755
BURTON, E. F., Bancroft's Applied Colloid Chemistry, 539
CAJORI, F., Waste of Mental Effort, 355; Tangent Lines, 687
California, Poppy, D. S. JORDAN, 168
CALKINS, M. W., Russell's Analysis of Mind, 44
Cancer, Mortality from, 652
Carbon, Dissociation of, L. BELL and P. R. BASSETT, 512
CAREY, E. J., Smooth Bladder of Dog, 226

CARLETON, M. A., Disease of Bananas, 663
 CARR, R. H. and E. G. MAHIN, Fat in Cream, 512
 CATTELL, J. McK., Order of Scientific Merit, 541
 Ceramic Day, 303
 CHANG, H. T., Geological Survey of China, 233
 Chemical Foundation, 13, 137; Soc., Amer., 219; C. L. PARSONS, 21, 50, 81, 112, 393, 424, 453, 485, 518, 547, 577, 607, 681, 693, 722, 746; Industry (British), 69; Equation, H. A. CURTIS, 258; Prize, 304; Spelling, C. A. JACOBSON, 368; C. E. WATERS, 603; L. O. HOWARD, 450; H. W. WILEY, 514
 Chemistry, Journal of Physical, 304; General, W. SEGERBLOM, 320; Society, Amer. Physical, 627; at Boston, 628; First-year College, H. N. HOLMES, 648
 Chemists, International Meeting of, at Utrecht, 270
 Children and Museums, 311
 Chromosomes, Heterotypic, Organization of, W. R. TAYLOR, 635
 Cicada, Periodical, J. N. GOWANLOCK, 144
 CLARK, H. L., Misuse of Questionnaire, 573
 CLELAND, H. F., Weathering under Constant Conditions, 659
 Climates, Evolution of, M. MANSON, 571
 Clinkertill, L. P. Dove, 338
 Coal, Mining, 37; Atmospheric Dust in, W. S. GLOCK, 484
 COCKERELL, T. D. A., Huia Onslow, 185; Mealybug and Other Coccoids, 308
 Coelenterata, Fresh Water, H. GARMAN, 664
 COFFIN, CHARLES A., Foundation, 653
 Cole, Frank Nelson, Prize, 710
 COLLINS, J. L. and E. B. BABCOCK, Duplicate Genes and Inheritance of Glandular Pubescence in Crepis, 392
 Colloidal State, J. ALEXANDER, 663
 Colorado River, F. E. WEYMOUTH, 59; B. WILLIS, 177; C. E. GRUNSKY, 521
 COMPTON, A. H., Radiation Form of Matter, 717
 CONN, H. J., American Biological Stains, 156, 562, 594, 689
 Conservation, and Modern Life, J. H. LEES, 559; of Resources of Pacific, 680
 COOMBS, H. C., and F. H. PIKE, Respiration, 691
 Cordilleran Region, Glaciation of, T. LARGE, 335; F. LEVERETT, 388; J. T. PARDEE, 686
 Cost, Accounting, F. W. FEUERBACHER, 537; of German Publications, J. L. HOWE, 228
 Crania, Human, R. B. DIXON, 418
 Craterlets in E. Cent. Arkansas, E. T. THOMAS, 20
 Cream, Fat in, H. W. GREGORY, 309; E. G. MAHIN and R. H. CARR, 512
 Crepis, E. B. BABCOCK and J. L. COLLINS, 392
 Cretaceous in Mongolia, H. F. OSBORN, 291
 CROZIER, W. J., Marine Biology, 751
 Cultivation and Evaporation, J. ALEXANDER, 196
 Culture and Research in University, J. C. MERRIAM, 263
 CUNNINGHAM, B., N. C. Acad. of Sci., 147
 CURTIS, H. A., Balancing Chemical Equation, 258
 Dark Room Photography, A. L. MELANDER, 536
 DAVENPORT, C. B., Alfred Goldsborough Mayor, 134
 DAVIS, W. M., Graduate School of Geography, 121
 DETLEFSEN, J. A., Walter's Genetics, 145
 Development, Method of Initiating, E. E. JUST, 202
 Devonian Forest at Gilboa, N. Y., 565
 Diabetes, Insulin as Cure for, 665
 DICKSON, L. E., Solitaire Game, 418
 DITMARS, R., Reptiles of World, A. G. RUTHVEN, 79
 DIXON, R. B., Human Crania, 418
 Dog, Smooth Bladder of, E. J. CAREY, 226; Homing of, W. D. HARRY, 339
 DOVE, L. P., Clinkertill, 338
 DRAPER, HENRY, Medal, 741
 DUNN, E. R., Zoogeography, 336
 Dye Industry, French, 273
 Earth Currents and Magnetic Variations, F. SANFORD, 464; L. A. BAUER, 592
 Eclipse, Solar, of Sept. 21, 441
 Ecological Soc. of Amer., 599
 Einstein, Translating, E. E. SLOSSON, 752
 Electricity, Static, H. E. JAQUES, 252
 Electro-Chem. Soc., Amer., 244, 745
 ELLIS, J. W., Infra-Red Absorption, 313
 ELMER, O. H., Cross-Inoculation and Insect Transmission, 370
 Endowments, Controlling Research, 339
 Engineers and Amer. Univ. in Europe, 71
 Eosins, American, H. J. CONN, 689
 Equilibration, C. R. GRIFFITH, 676
 Eugenics, Int. Committee of, 626
 EVANS, H. M., and K. S. BISHOP, Dietary Essential to Reproduction, 650
 Evolution, and Bible, C. V. PIPER, 108; Teaching of, F. L. PICKETT, 298; J. H. BROWN, 448; in Minnesota, 530; Physico-Chemical Mechanism of Mutation and, J. ALEXANDER, 323
 FARR, C. H., Damp Chamber for Microscope, 227
 FENNEMAN, N. M., Division of Geol. and Geog. of N. R. C., 620
 FERRIS, G. F., Green's Coccidae of Ceylon, 312
 FEUERBACHER, F. W., Cost Accounting, 537
 Field Museum of Natural History, 39
 Fiji-New Zealand Exped. of Univ. of Iowa, 442
 Fishes, Effect of Forest Fires on, 362
 Fisher, Emil, Aus Meinem Leben, B. HARROW, 482
 FISCHER, M., Whither, 405
 Forest under Washington, 529
 Foulerton Professorship and Studentship, 161
 France, Agriculture and Wireless Telephony in, 70
 FROST, E. B., Russian Astronomers, 279
 FULCHER, G., Analytic Abstracts, 678
 GAGER, C. S., Financial Support of Technical Journals, 633
 GAINES, P. L., Azotobacter, 21; and H. W. BATCHELOR, 49
 GARMAN, H., Fresh Water Coelenterata in Kentucky, 664
 GARNER, W. W., Sand Drown, 341
 Garter Snake, Spermatogenesis of, L. E. THATCHER, 372
 GARTH, T. R., Intelligence of Indians, 635
 Gas Generator, A. P. HARRISON, 285
 Geographers, Association of, American, 598
 Geography, Graduate School of, W. M. DAVIS, 121
 Geological Congress, 12th International, 329; Excursion, New England Inter-collegiate, 442; Society of America, 303; Survey of China, H. T. CHANG, 233; Survey, U. S., 530
 Geology of California and Dutch East Indies, H. A. BROUWER, 388; American, M. BENJAMIN,

480, 755; Beginnings of American, T. C. MENDENHALL, 661
GERICKE, W. F., Water Culture Experimentation, 421
GLOCK, W. S., Atmospheric Dust in Coal, 484
GLOVER, J. W., U. S. Life Tables, R. PEARL, 756
Goitre, Prevention of, J. C. McCLENDON, 269
GOLDMAN, M. I., Basal Glauconite and Phosphate Beds, 171
Good Roads Scholarship, 273
GORDON, S. G., Vauxite and Paravauxite, 50
Gorgas Memorial, 245; Work of, 419
GOWANLOCK, J. N., Periodical Cicada, 144
Green, E. F., Coccidæ of Ceylon, G. F. FERRIS, 312
GREGORY, H. E., Polynesian Research, 527
GREGORY, H. W., Determination of Fat in Cream, 309
GREGORY, R., Teaching of Science, 433
GRIFFITH, C. R., Equilibration, 676
GRINNELL, J., Avian Populations in California, 671
GRUNSKY, C. E., Colorado River Problem, 521
GUBERLET, J. E., Lowery Lamon Lewis, 563
GUDGER, E. W., Occurrence in Atlantic Ocean of Whale Shark, 251
GUYER, M. F., Newman's Readings in Evolution, Genetics and Eugenics, 451
Haldane, J. S., Respiration, Y. HENDERSON, 390
Halsted, George Bruce, A. M. HUMPHREYS, 160
Halsted, William Stewart, H. C., 461
HANNA, G. D., Recent Expedition to Islands off West Coast of Lower California, 503
HARDY, G. H., Theory of Numbers, 401
HARRIS, J. A., and H. R. LEWIS, Winter Cycle in Fowl, 230
HARRIS, N. M., Daylight Meteorite, 514
HARRISON, A. P., Gas Generator for Laboratory Use, 285
HARROW, B., Emil Fischer's Aus Meinem Leben, 482
HARRY, W. D., Homing of Dog, 339
HARTMAN, F. A., Emergency Function of Adrenal, 146
HARVEY, R. B., Plants and Artificial Light, 366
Hayden Award, 746
HEDGES, F., Bacterial Pustule of Soy Bean, 111
HEGNER, R. W., Intestinal Protozoa, 439
Helium, Spectrum of, T. LYMAN, 167; Recovery of, 505
HENDERSON, Y., Haldane's Respiration, 390
Henry Draper Medal, 741
HERRICK, C. J., Smell, Taste and Allied Senses in Vertebrates, G. F. Parker, 515
Herschel Centenary, Pilgrimage, 328, 381
HICKS, W. M., Analysis of Spectra, 687
Highways, Conference on, 412, 189
HOBSON, E. W., Functions of Real Variable, H. BLUMBERG, 574
HOLLAND, W. J., Tingitidæ or Tingidæ, 334, 535
HOLMES, H. N., First-year-College Chemistry, 648
HOLMES, R. M., Palladium, 201
Hornaday, W. T., Minds and Manners of Wild Animals, R. M. YERKES, 604
HOWARD, L. O., Chemical Spelling, 450
HOWE, J. L., Cost of German Publications, 228
HULBERT, E. O., Sealing Quartz to Glass, 147
HUMPHREYS, A. M., George Bruce Halsted, 160
HUMPHREYS, W. J., Relativity, 603
Immigration Laws, 12
Indians, Intelligence of, T. R. GARTH, 635
Infra-Red Absorption, J. W. ELLIS, 315
Insulin as Cure for Diabetes, 665
Iron and Steel Electrical Engineers, Ass. of, 244, 274
IRVINE, J. C., Organization of Research, 373
Isotopes of Tin, 19
JACOBSON, C. A., Chemical Spelling, 368
JACQUES, H. E., Static Electricity, 252
Jenkins, J. T., History of Whale Fisheries, F. A. LUCAS, 109
Jenkins, O. P., Interesting Neighbors, D. S. JORDAN, 46
JENNESS, D., Stefansson's Friendly Arctic, 8
JOHNSON, C. W., Muscina Pascuorum Meigen in N. E., 604
JOHNSON, H. H., Centriole Derivative in Spermatogenesis of Oecanthus, 759
JOHNSON, R. H., Vacuum Tube Amplifier, 449
JONES, A. T., Meteorites, 169
JONES, L. T., and H. G. TASKER, Measurement of Capacities and Inductances, 79
JORDAN, D. S., Natural and Unnatural History, 46; California Poppy, 168; Production of Species, 448
JUST, E. E., Effect on Development of Sperm Boiled in Oxalated Sea Water, 202
KARPINSKI, L. C., Stevenson's Terrestrial and Celestial Globes, 199
KELLOGG, V., Russian Scientific Literature, 45; Aid for Russian Scientists, 481, 504, 634, 664, 717
KENDALL, J., Loeb's Proteins and Theory of Colloidal Behavior, 369
Keyser, C. J., Mathematical Philosophy, G. A. MILLIE, 229
KIESS, C. C. and H. K., Arc Spectrum of Chromium, 666
KINGSLEY, J. S., Swordfish, 225
Knowledge, Humanizing of, J. H. ROBINSON, 89
KNOWLTON, F. H., Manson's Evolution of Climates, 254
Lace-Bugs, Names of, W. J. HOLLAND, 334
LARGE, T., Glaciation of Cordilleran Region, 335
Latitude, Changes of, R. H. TUCKER, 555
LEES, J. H., Iowa Academy of Science, 260; Conservation and Modern Life, 559
LEVERETT, F., Glaciation, 388
LEVITT, I., Relief for Russian Scientific Men, 387
LEWIS, H. R., and J. A. HARRIS, Winter Cycle in Fowl, 230
Lewis, Lowery Laymon, J. E. GUBERLET, 563
Light, Zodiacal, C. S. OSBORN, 308
LIPMAN, C. B., Nitrification in Sea Water, 501; and J. K. TAYLOR, Wheat Plant and Atmospheric Nitrogen, 605
LIVINGSTON, B. E., Weaver, Jean and Crist on Development and Activities of Roots of Crop Plants, 283
LOEB, J., Colloidal Behavior of Proteins, 369, 731
London Bird Sanctuary, 744
Lowell Institute Lectures, 443
Lower California, Expedition to Islands off Coast of, G. D. HANNA, 503
LUCAS, F. A., Jenkins's History of Whale Fisheries, 109
LUCKHARDT, A. B., and P. J. ROSENBLOOM, Parathyroid Tetany, 48; and J. BLUMENSTOCK, Acute Parathyroid Tetany, 257

Lyman, C. S., Bust of, 361
 LYMAN, T., Spectrum of Helium, 167; Acoustical Research, 633
 MCADIE, A., Filtered Air, 108
 MCCLENDON, J. C., Iodine and the Prevention of Goitre, 269
 MACELWANE, J. B., Seismological Evidence, 478
 MCFARLAND, F. M., Microscopical Technique, 43
 MCKEEHAN, L. W., X-Ray Crystallometry; X-Ray Wave Lengths; Space-Lattice Dimensions and Atomic Masses, 757
 McMURTRY, J. E., Sand Drown, 341
 Macrosiphum Solanifolii and Bean Mosaic Virus, R. NELSON, 342
 Magnesite in Southern Nevada, 69
 MAHIN, E. G., and R. H. CARR, Fat in Cream, 512
 MANSON, M., Evolution of Climates, 254, 571
 Marine Biology, W. J. CROZIER, 751
 MARSH, F. W., Beef Agar, 367
 Mass. Inst. of Tech., Appointments at, 383; Presidency of, 444
 Mathematical, Soc., Amer., R. G. D. RICHARDSON, 423, 730; Association of America, 627
 MATTHES, F. E., Highest Water Fall, 75
 Mayor, Alfred Goldsborough, R. S. WOODWARD, 68; C. B. DAVENPORT, 134; T. C. MENDENHALL, 198
 Mealy-bug, T. D. A. COCKERELL, 308
 Measurement of Capacities and Inductances, H. G. TASKER and L. T. JONES, 79
 Medicine, Clinical, F. R. SABIN, 149
 MEGGES, W. F., Austrian Scientific Publications, 634
 MEISINGER, L. L., Aerological Summary, 482
 MELANDER, A. L., Miniature Photographic Dark Room, 536
 MELLEN, I. M., Effects of Captivity on Sex Characters, 573
 MENDENHALL, T. C., Alfred Goldsborough Mayor, 198; U. S. Fundamental Standards of Length and Mass, 377; Beginnings of American Geology, 661
 Mental Effort, Waste of, F. CAJORI, 355
 MENZIES, A. W. C., Alexander Smith, 409
 MERRIAM, J. C., Common Aims of Culture and Research in the University, 263
 Meteorites, Hunting, A. M. MILLER, 249; Daylight, N. M. HARRIS, 514; Temperatures of, A. T. JONES, 169
 Metric Standardization, 362
 Mexican Archeology, Z. NUTTALL, 19
 Microscope, Damp Chamber for, C. H. FARR, 227
 Microscopical Technique, F. M. MCFARLAND, 43
 MILLER, A. M., Meteorite Hunting, 249
 MILLER, G. A., Keyser's Mathematical Philosophy, 229; Osgood and Graustein's Plane and Solid Analytic Geometry, 420
 MINER, J. B., Dr. Lipman's Laboratory of Applied Psychology, 310
 MITCHELL, H. H., Balancing Dietaries with Respect to Vitamines, 34
 Monkey, Sex Chromosomes of, T. S. PAINTER, 286
 MOODIE, R. L., Paleopathology of Parasuchians, 417
 MOORE, E. S., American Association, Section E., Geology and Geography, 174
 MORGAN, J. L. R., Chemical Principles, 340
 Mosaic, O. H. ELMER, 370
 MOSS, E. G., Sand Drown, 341
 Motorless Flight in England, 573
 Mount Everest Expedition, 70, 470
 MURPHY, R. C., Whitney South Sea Expedition of Amer. Museum of Natural History, 701
 Muscina Paseuorum Meigen in N. E., C. W. JOHNSON, 604
 Museum of Natural History, Amer., 31; Expeditions of, 182; Whitney South Sea Expedition of, R. C. MURPHY, 701
 National, Research Council, 531; Academy of Science, 531, 666; Functions of Division of Geology and Geography of, N. M. FENNEMAN, 620; Medical Fellowships, 624; Parks, Menace to, W. G. VAN NAME, 705
 Naturalists, West. Soc. of, C. STOCK, 204; Am. Soc. of, 599
 NELSON, R., Bean Mosaic Virus, 342
 Newman, H. H., Readings in Evolution, Genetics and Eugenics, M. F. GUYER, 451
 Nitrates in Southeastern California, 471
 Noyes, Alfred, Watchers of the Sky, E. W. BROWN, 717
 Numbers, Theory of, G. H. HARDY, 401
 NUTTALL, Z., Mexican Archeology, 19
 Oecanthus, Centriole Derivative in Spermatogenesis of, H. H. JOHNSON, 759
 OLSON, A. R., X-Rays and Chemical Reaction, 231
 Onslow, Huia, T. D. A. COCKERELL, 185
 Optical Instruments, 219; Soc. of Amer., 38, 636
 Ornithologists Union, American, 381
 OSBORN, C. S., Zodiacal Light, 308
 OSBORN, H. F., and C. A. REEDS, Antiquity of Man, 256; Cretaceous and Older Tertiary Strata in Mongolia, 291
 Oxygen, in Metallurgical Operations, 506
 PAINTER, T. S., Sex Chromosomes of Monkey, 286
 Palladium, R. M. HOLMES, 201
 Paper, Cabinet for Colored, C. A. RUCKMICK, 76
 Paraffine Paper Screens for Showing Position of Retinal Image, G. D. SHAFER, 252
 Parasuchians, Paleopathology of, R. L. MOODIE, 417
 Paravauxite, S. G. GORDON, 50
 PARDEE, J. T., Glaciation in Cordilleran Region, 686
 Parker, G. H., Smell, Taste and Allied Senses in Vertebrates, C. J. HERRICK, 515
 PARSHLEY, H. M., Tingitidæ or Tingidæ, 449, 754
 PARSONS, C. L., Amer. Chem. Soc., 21, 50, 81, 112, 393, 424, 453, 485, 518, 547, 577, 607, 693, 722
 Pasteur, as Drama, 12; on Science and Applications of Science, C. ROBERTSON, 194; Louis, 710
 PEABODY, F. W., Department of Medicine at Peking Union Medical College, 317
 PEARL, R., Modern Biology, 581; Glover's United States Life Tables, 756
 Peking Union Medical College, Dept. of Medicine, F. W. PEABODY, 317, 410
 Perigenesis, H. C. SANDS, 517
 PETER, A. M., Kentucky Academy of Science, 85
 Philippines, Bacterial Plant Diseases in, C. G. WELLES, 18
 Photometric Standards, 186
 Physiological Effects at High Altitudes, 45
 PICKETT, F. L., Teaching of Evolution, 298
 PIETERS, A. J., Processing of Straw, 108
 Pigeons and Velvet Beans, W. D. SALMON, 368
 PIKE, F. H., and H. C. COOMBS, Respiration, 691
 PIPER, C. V., Does Bible Teach Evolution, 108
 Plants, Feeding Power of, E. TRUOG, 294; Growth of in Artificial Light, R. B. HARVEY, 366

PRIEST, I. G., Optical Society of America, 636
Production of Dyes in United States, 188
Proteins, Colloidal Behavior of, J. LOEB, 731
Protozoa, Frog and Toad Tadpoles Sources of Intestinal, R. W. HEGNER, 439
Psychological Association, American, 413
Psychology, Dr. Lipman's Laboratory of Applied, J. B. MINER, 310
Publishers, Methods of German, R. C. ARCHIBALD, 45
Pueblo Indians, Justice for, 665
Quartz, Sealing to Glass, E. O. HULBERT, 147
Questionnaire, Misuse of, H. L. CLARKE, 573
Radiation Form of Matter, A. H. COMPTON, 716
Radio, Frequencies, Precise Standardization of, 564
Ramsay Memorial, 596
Redwood Trees of California, 302
REEDS, C. A., and H. F. OSBORN, Antiquity of Man, 256
Relativity, W. J. HUMPHREYS, 603
Reproduction, Dietary Essential for, H. M. EVANS and K. S. BISHOP, 650
Research, Medical, 14; Funds, Administration of by Elector Plan, C. E. SEASHORE, 66; Fellowships for Medical, 188; International, 243; and Culture in the University, J. C. MERRIAM, 263; Endowments Controlling, 339; Organization of, J. C. IRVINE, 373; Work, Cost of, 409; at Tortugas Laboratory, A. A. SCHAEFFER, 468; Council, National, 531, 620, 224; Polynesian, H. E. GREGORY, 527; Protecting at Polls, 538; Gifted Students and, C. E. SEASHORE, 641; in Marine Biology, W. J. CROZIER, 751
Respiration, F. H. PIKE and H. C. COOMBS, 691
RICHARDSON, R. G. D., Amer. Math. Soc., 423, 730
RIETZ, H. L., Veblen's Analysis Situs, 575
RIGG, G. B., Effects of Copper Wire on Trees, 687
ROBERTSON, C., Pasteur on Science and Applications of Science, 194
ROBINSON, J. H., Humanizing of Knowledge, 89
Rockefeller, Foundation, Activities of, 363; Institute for Medical Research, 14
ROSENBLUM, P. J., and A. B. LUCKHARDT, Parathyroid Tetany, 48
Royal Sanitary Institute, 272
RUCKMICK, C. A., Cabinet for Colored Papers, 76; Institute for Acoustic Research, 357
Russell, B., Analysis of Mind, M. W. CALKINS, 44
Russia, American Literature for, R. ZON, 311; V. KELLOGG, 45; Aid for Scientific Men in, 717; E. B. FROST, 279; I. LEVITT, 389; V. KELLOGG, 504, 634; M. I. WOLKOFF, 144
RUTHVEN, A. G., Ditmar's Reptiles of World, 79
SABIN, F. R., Teaching Clinical Medicine, 149
ST. JOHN, C. E., Hicks' Analysis of Spectra, 687
SALMON, W. D., Feeding Velvet Beans to Pigeons, 368
Sand Drown, W. W. GARNER, J. E. McMURTRY and E. G. MOSS, 341
SANDS, H. C., Perigenesis, 517.
SANFORD, F., Magnetic Variations, 464
SARGEANT, W. W., Salt Lake City Meeting, A. A. A. S., 241
SCHAEFFER, A. A., Research at Tortugas Laboratory, 468
SCHRAMM, J. R., Abstracting and Indexing Biological Literature, 495
Science, Kentucky Acad. of, A. M. PETER, 85; N. C. Acad. of, B. CUNNINGHAM, 147; Record of, W. W. BISHOP, 205; and Tropics, 228; Iowa Acad. of, J. H. LEES, 260; Ohio Acad. of, 288; Section Organization of, 328; California Acad. of, 381; in Fiction, E. E. SLOSSON, 419; Teaching of, R. GREGORY, 433; Appreciation of, 755; News, Nos. 1456, 1457, 1458, 1459, 1460, 1461
Scientific Notes and News, 15, 39, 72, 104, 140, 164, 190, 221, 246, 274, 305, 330, 364, 383, 413, 445, 474, 507, 532, 567, 599, 629, 655, 682, 712, 747; Expedition to Islands off West Coast of California, 135; Publications, Repositories for, W. E. ALLEN, 197; Research, Protecting at Polls, 538; Merit, Order of, J. McK. CATTELL, 541; Publications, Austrian, W. F. MEGGERS, 634
SEASHORE, C. E., Elector Plan for Administration of Research Funds, 66; Gifted Students and Research, 641
Sea Water, Does Nitrification Occur in? C. B. LIPMAN, 501
SEERS, J. W., Earth and Its Life, D. S. JORDAN, 46
SEGERBLOM, W., Course in General Chemistry, 320
Seismological Evidence, J. B. MACELWANE, 478
Series Regularities in Arc Spectrum of Chromium, C. C. and H. K. KIESS, 666
SETCHELL, W. A., Zostera Marina, 575
Sex Character, I. M. MELLEN, 573
SHAFFER, G. D., Position of Retinal Image, 252
Shenandoah Caverns, 240
SHERRINGTON, C. S., Animal Mechanism, 345
SHULL, A. F., Proposed Federation of American Biological Societies, 184; 359
Sigma Xi, Society of, 654
SLOSSON, E. E., Science in Fiction, 419; Translating Einstein, 752
Smith, Alexander, A. W. C. MENZIES, 409; 441
Soils, Depletion of, M. WHITNEY, 216
Solar Eclipse of September 21, 441
Solitaire, L. E. DICKSON, 418
Soy Bean, Bacterial Pustule of, F. HEDGES, 111
Species, Production of, D. S. JORDAN, 448
Spirit Photographs, 253
Standards, Bureau of, A. G. WEBSTER, 170
STEBBINS, J., Amer. Astronomical Soc. 459
Stefansson, V., The Friendly Arctic, D. JENNESS, 8
STEHLÉ, R. L., Botulinus Toxin, 143
STETSON, H. T., Stellar Diameters, 535
Stevenson, E. L., Terrestrial and Celestial Globes, L. C. KARPINSKI, 199
STILES, C. W., Zoological Nomenclature, 690
STOCK, C. W. Soc. of Naturalists, 204
Straw, Processing of, A. J. PIETERS, 108
Students, Foreign, and Federal Immigration Laws, 12
STUHLMAN, O., JR., Extension of X-ray into Ultra-violet Spectrum, 344
Sullivan, Joseph, Medal, 472
SWINGLE, W. W., Iodine and Anuran Metamorphosis, 720
Swordfish, C. H. TOWNSEND, 18; Food Habits of, J. S. KINGSLEY, 225
Tangent Lines, F. CAJORI, 687
TASKER, H. G., and L. T. JONES, Measurement of Capacities and Inductances, 79
TAYLOR, J. K., and C. B. LIPMAN, Wheat Plant and Atmospheric Nitrogen, 605

TAYLOR, W. R., Organization of Heterotypic Chromosomes, 635

Technical Journals, Financial Support of, C. S. GAGER, 633

Tetany, Control and Cure of Parathyroid, A. B. LUCKHARDT and P. J. ROSENBOOM, 48; Acute Parathyroid, A. B. LUCKHARDT and J. BLUMENSTOCK, 257

Textile Research Institute, 13

THATCHER, L. E., Spermatogenesis of Garter Snake, 372

THOMAS, E. T., Craterlets in East Central Arkansas, 20

TIFFANY, L. H., Algal Statistics gleaned from Gizzard Shad, 285

Tin, Isotopes of, 19

Tingitidæ or Tingidæ, W. J. HOLLAND, 334, 535; H. M. PARSHLEY, 449, 754; A. C. BAKER, 603

Tobacco, Chlorosis of, W. W. GARNER, J. E. MURTRY and E. G. MOSS, 341

Tortugas Laboratory, Research at, A. A. SCHAEFFER, 468

TOWNSEND, C. H., Swordfish, 18

Traffic Systems, Colors for, 652

Trees, Effects of Copper Wire on, G. B. RIGG, 687

TRUOG, E., Feeding Power of Plants, 294

Tuberculosis, Death Rate from, A. C. ABBOTT, 387

TUCKER, R. H., Changes of Latitude, 555

Twelve-Hour Shift, 326

Tyler, Ansel Augustus, H. B. WARD, 37

United States Fundamental Standards of Length and Mass, T. C. MENDENHALL, 377

University, and Educational Notes, 17, 43, 75, 107, 143, 167, 194, 225, 249, 278, 307, 334, 364, 387, 416, 447, 477, 511, 534, 570, 602, 632, 659, 686, 715, 750; Stanford, 100; Johns Hopkins, 161; Buffalo, Installation of Chancellor, 443; Lehigh, Installation of President of, 473; Colorado, Mountain Laboratory, Dedication of, 162; Pennsylvania, 39; Yale, 382, 472; Idaho, Sigma Xi at, 598; Wyoming, and Dr. Nelson, 680; Wisconsin, 711.

Vacuum Tube Amplifier, R. H. Johnson, 449; Gravitation Needle, C. BARUS, 452

Vallisneria, Sperms of, R. B. WYLIE, 422

VAN NAME, W. G., Menace to National Parks, 705

Vauxite, S. G. GORDON, 50

Veblen, Q., Analysis Situs, H. L. RIETZ, 575

Ventilating Code of American Society of Heating and Ventilating Engineers, 220

Vital Statistics, French, 187; of German cities, 301

Vitamines, Balancing Dietaries with Respect to, H. H. MITCHELL, 34

WALKER, K. C., Bibliography and Research, 418

WANSER, H. M., Photoperiodism of Wheat, 313

WARD, H. B., Ansel Augustus Tyler, 37

Water, Culture Experimentation, W. F. GERICKE, 421; Fall, F. E. M. MATTHES, 75

WATERS, C. E., Chemical Spelling Match, 603

Weathering under Constant Conditions, H. F. CLELAND, 660

Weber, Professor Max, 746

WEBSTER, A. G., Bureau of Standards, 170

Weights and Measures, Conference on, 232

WELCH, W. H., Bryn Mawr College and Higher Education of Women, 1

WELLES, C. G., Bacterial Plant Diseases in Philippine Islands, 18

WEYMOUTH, F. E., Conservation of Waters of Colorado River, 59

Whale Shark in Atlantic Ocean, E. W. GUDGER, 251

Wheat, Photoperiodism of, H. M. WANSER, 313; Atmospheric Nitrogen, C. B. LIPMAN and J. K. TAYLOR, 605

Whither? M. FISCHER, 405

WHITNEY, M., Depletion of Soils, 216

WILEY, H. W., Howard on Chemical Spelling, 514

WILLIS, B., Geology of Colorado River Basin, 177

Willson, Robert Wheeler, Scientific Work of, M. H. D., 651

Winter Cycle in Fowl, J. A. HARRIS and H. R. LEWIS, 230

Wireless Telephony and Agriculture in France, 70

WOLKOFF, M. I., Life of Russian Professors, 144

Women, Higher Education of and Bryn Mawr College, W. H. WELCH, 1

WOODWARD, R. S., Alfred Goldsborough Mayor, 68

Work Periods, 327

WYLIE, R. B., Sperms of Vallisneria, 422

X-Rays, A. R. OLSON, 231; Extension of, into Ultraviolet Spectrum, O. STUHLMAN, JR., 344; Crystallometry, L. W. MCKEEHAN, 757

YERKES, R. M., Hornaday's Minds and Manners of Wild Animals, 604

Yolk Sac, Human, L. B. AREY, 75

Zeitschrift für Praktische Geologie, 597

ZON, R., American Literature for Russia, 311

Zoogeography, E. R. DUNN, 336

Zoological Nomenclature, C. W. STILES, 690; Society of London, Aquarium of, 220

Zoologists, American Society of, 507

Zostera Marina, W. A. SETCHELL, 575

